

**FIRST RECORDS OF *PLATYCHALCIS* IN
NORTH AMERICA AND NEW HOST RECORDS OF
CERATOSMICRA SPP. AND *BRACHYMERIA OVATA*
(HYMENOPTERA: CHALCIDIDAE)¹**

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ABSTRACT: *Platychalcis phalara* is recorded for the first time in Panama, El Salvador, Mexico, and the United States. The male is described, and color and morphological variation of *Platychalcis phalara* are discussed. New host and rearing records are presented for four *Ceratasmicra* species, including a primary parasite record for *Ceratasmicra debilis* from *Stenoptilodes antirrhina* (Lepidoptera: Pterophoridae). *Ceratasmicra* were previously reported as obligatory secondary parasites of braconid and ichneumonid wasps. Previous host records are reviewed. A new host record of *Brachymeria ovata* from *Danaus plexippus* (Lepidoptera: Danaidae) is presented.

Upon studying North American Chalcididae, I recently found two specimens of the undescribed male of *Platychalcis phalara* Burks and several females which greatly expand the range of this species and show color and morphological variation. In this paper, I describe the male of *P. phalara* and discuss the color and morphological variations. Further, new host and rearing records were discovered for four *Ceratasmicra* Ashmead species and *Brachymeria ovata* (Say). A record for *Ceratasmicra debilis* (Say) demonstrates it is a primary parasite. *Ceratasmicra* were previously reported as obligatory secondary parasites (Burks 1979). This information is presented to update the host and distributional data in Burks (1979) and DeSantis (1979).

***Platychalcis phalara* Burks**

Described by Burks (1939) from three females collected in Costa Rica and Honduras. In the genus *Platychalcis*, males are undescribed and hosts are unknown (DeSantis 1979).

Male description. — 3 mm. Black with frons, clypeus, labrum, mandibles, antennae, pronotum, tegulae, scutellum (except for base and apex), propodeum, fore and middle legs, apex of hindcoxae, apex and base of hindfemora and hindtibiae, and tarsi yellow-brown.

Head finely coriaceous with silver setae, 2X as wide as high (frontal view), 1.7X as high as wide (lateral view), wider than thorax (dorsal view); eyes large, bulging laterally, glabrous; ocelli round, lateral ocelli 0.5X their diameter from compound eye, 2X their diameter from

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each other, anterior ocellus 1X ocellar diameter from lateral ocelli; occiput acciculate and setose; frons concave, polished, smooth; antennae inserted just above ventral margin of compound eye, densely setose; scape 2X as wide at apex than base, reaching above anterior ocellus; flagellar segments 1 and 2, 3-8, and club 1.5X, 0.75X, and 0.5X as wide as long, respectively.

Thorax flat dorsally, with sparse setigerous umbilicate punctures, integument polished, smooth (except for acciculate base of mesoscutum); mesopleural acetabulum transversely carinate, polished; mesopleural densely punctured; propodeum with a V-shaped carina originating from small tooth at base, a few vague carina laterally, integument coriaceous; hindcoxae as long as hindfemora, outer-dorsal side polished and glabrous, outer-ventral side setose and polished; hindfemora 2X as long as wide, setose, polished, 15 small teeth along ventral margin; wings smokey throughout, densely setose.

Abdomen 0.4X length of thorax, polished, sparsely setose laterally; petiole 6X as long as wide, length 0.9X abdomen, cylindrical, smooth, matte; tergite 1 0.4X length of abdomen, length equal to tergites 2-5 together; tergite 2 2.5X tergites 3-5.

Voucher male marked with red label "Voucher, Male Description, *Platychalcis phalara* Burks" and deposited in American Museum of Natural History, New York. Collection data: "MEXICO, Chiapas, Palenque, 10 Sept 1974, W. Hanson, G. Bohart, UTAH STATE UNIVERSITY."

New distributional records for *P. phalara* include: United States, Mexico, El Salvador, and Panama, representing a considerable northward and southward range extension.

Collection data is: UNITED STATES, Arizona, (1♀), Cochise Co., S.W. Res. Sta., 5 mi W. Portal, Chiricahua Mtns., 5400', VIII-16-17-1978, Malaise trap, M.S. Wasbauer (CDFA). Florida, (2♀), Alachua Co., Gainesville, Doyle Conner Bldg., XI-5-1976, X-25-29-1976, pan trap (Moericke trap), E.E. Grissell (FDA). MEXICO, Chiapas, (5♀, 2♂), Palenque, IX-10-1974, W. Hanson and G. Bohart (USU). Tabasco, (1♀), Cardenas, IX-8-1974, W. Hanson and G. Bohart (USU). Nayarit, (1♀), Laguna del Oro, VIII-25-1974, W. Hansen and G. Bohart (USU). Jalisco, (1♀), 18 mi N. Barro de Navidad, VIII-23-1974, Hanson and Schwartz (USU). EL SALVADOR, Quezaltepeque, (1♀), 500 m, VI-19-1963, D.Q. Cavagnaro and M.E. Irwin (CAS). PANAMA, PTO. Armulelles, (1♀), I-25-1983, Malaise trap, L. Stephens (FDA). Ancon, C.Z., (3♀), on cotton, VI-1-21, A. Molino (USNM). Museum acronyms above are defined under acknowledgments.

Comments.-Males are like females except for the shape of the abdomen (ovipositor absent, ninth sternite present), the flagellum yellow versus black, the petiole 6X as long as wide versus 4X, and they are 3 mm in length versus 4 mm.

Some female specimens vary in color and body length from Burks's (1939) description. Body length varies from 3 to 5 mm. Two Florida specimens have the pronotum black (except yellow dorsolateral margin) versus the entire dorsum of the pronotum yellow, and the posterolateral yellow spot on the scutellum covering 1/16 the area versus 1/4 the area. Three Panama specimens have the scutellum (except for base medially and

posterior margin which are brown) yellow versus black with a posterolateral yellow spot; they also have a yellow oblong spot mediad of the parapsidal line versus the mesoscutum completely black. The Mexican specimens have the flagellum, hindfemur markings, and gaster black versus brown.

Ceratosmicra spp. Ashmead

Host records for North American *Ceratosmicra* denote them as secondary parasites of braconid or ichneumonid wasps that parasitize Lepidoptera and/or Coleoptera (Burks 1940, 1968, 1979; Stephen 1973). Peck (1963) listed an unidentified lepidopteran host for *C. debilis*; this record was omitted from Burks (1979). Hosts are known for three (*C. campoplegicis* Burks, *C. meteori* Burks, and *C. immaculata* (Cresson)) of the six North American species (Burks 1979). DeSantis (1979) listed hosts for four other *Ceratosmicra*, indicating that two may be primary parasites. Two are recorded from braconid wasps, *Ceratosmicra quadrilineata* (Cameron) from an unidentified pterophorid moth, and *C. debilis* from *Oxyptilus* Zeller (Lepidoptera: Pterophoridae).

Ceratosmicra debilis (Say).—Two rearings indicate this wasp is also a primary parasite of *Stenoptilodes* (= *Platyptilia*) *antirrhina* (Lange) (Lepidoptera: Pterophoridae). The first record is for one male and four females: "Riverside, Riverside Co., California, reared by E.I. Schlinger, 1 August 1958, primary parasite reared from *Platyptilla antirrhina*, host plant *Antirrhinum majus*" (UCR). *Antirrhinum majus* is the common snapdragon (Scrophulariaceae). Examination of the lepidopteran pupae attached to each specimen does not show evidence of a braconid or ichneumonid primary parasite. Dr. E.I. Schlinger (pers. comm., 1983) previously dissected the *S. antirrhina* pupae and observed the same. He noted that several specimens of an unidentified ichneumonid wasp were reared from other *P. antirrhina* pupae.

The second record is a male: "Sacramento, Sacramento Co., California, reared from *Platyptilia antirrhina*, ex. snapdragon, F.G. Andrews" (CDFA). This record also indicates *C. debilis* is a primary parasite.

Ceratosmicra paya Burks.—Host records include *Oidaematophorus paleaceus* Zeller (Lepidoptera: Pterophoridae) (Schwitzgebel and Wilbur 1942, Peck 1963). The *C. paya* female from the Schwitzgebel and Wilbur study is in the USNM. No host remains are attached to the specimen. No braconid or ichneumonid wasps were reported in that study.

A male: "Smokey Valley, Tulare Co., California, from *Oidaematophorus phalcelia* McD., collected 11 June 1944, emerged 2 July 1944"

(LCM), represents a new rearing record. The stage from which this wasp emerged was not noted nor were host remains attached. Another record is a female: "La Crescenta, Los Angeles Co., California, 25 July 1958., R.J. Lyon, emerged from Lepidoptera pupa from snapdragon" (USNM). Since no other data were noted, the parasite status (primary or secondary) cannot be established.

Ceratostmicra campoplegicis Burks.-Host records include an unidentified Campoplegini (Ichneumonidae) from *Catabena esula* Druce (Lepidoptera: Noctuidae) (Burks 1968, 1979), *Apanteles koebelei* Riley (Braconidae) from *Euphydryas chalcedona* Doubleday and Hew. (Lepidoptera: Nymphalidae) (Burks 1968, 1979), and *Perilitus coccinellae* (Shrank) (Braconidae) from the abdomen of an adult *Hippodemia convergens* Guerin-Meneville (Coleoptera: Coccinellidae) (Stephen 1973).

Two females: "Tehama Co., California, from *Schizura concinna*" (Smith) (Lepidoptera: Notodontidae), "2 July 1979, S. Wulfert" (CDFA), represent a new rearing record. No host remains or additional data are attached. Two braconids and six ichneumonids are primary parasites of *S. concinna* (Carlson 1979), but none are listed as hosts of *C. campoplegicis*.

Ceratostmicra meteori Burks.-Recorded as a secondary parasite of *Apanteles delicatus* Howard, *A. hyphantriae* Riley, *A. melanoscelus* (Ratz.) (Braconidae), *Casinaria limneitidis* (Howard) and *Meteorus hypantriae* Riley (both Ichneumonidae) (Burks 1979).

Five females: "Tehama Co., California, reared from *Schizura concinna*, 2 July 1979, S. Wulfert" (CDFA), and a female: "1 mi S. Pullman, Whitman Co., Washington, ex. *S. concinna*, 29 August 1971, R. Lagier" (USNM), are new rearing records.

The USNM specimen has the caterpillar remains attached. The caterpillar is 5 mm long, has half of the external integument eaten away, and is entirely covered with a thin layer of silk. Inside the larva is a silk covered cocoon, probably that of an ichneumonid. Six ichneumonids are primary parasites of *S. concinna* (Carlson 1979), but none are listed as hosts of *C. meteori*.

Some of these *Ceratostmicra* records need confirmation because secondary hosts are sometimes not detected and thus only the primary host is recorded on label data. Even if a secondary host is detected, identification is difficult unless other specimens are reared and a comparison of their cocoons, pupal exuvia, etc. is made.

Overall, this information expands the potential hosts for *Ceratostmicra*, demonstrates that *C. debilis* is a primary parasite, and suggests that some species may function as primary parasites, facultative secondary parasites, or obligatory secondary parasites.

Brachymeria ovata (Say)

A female *Brachymeria ovata* which was reared from an unrecorded host-*Danaus plexippus* (Linnaeus) (Monarch Butterfly) (Lepidoptera: Danaidae) was discovered in the SJSU collection. The wasp's emergence hole is two millimeters in diameter and located at the apex of the right wingbud of the chrysalis. Collection data is "Cupertino, California, October 1933, Collector C.D. Duncan, 2031-1."

More recently, I collected two *D. plexippus* chrysalids from Humphrey's Station, Fresno Co., California, 20 June 1982, with one showing parasitization by *B. ovata*. The female chalcidid had partially emerged from its pupa, but was dead within the Monarch's chrysalis. When collected, the chrysalis was a pale green color though by February 1983, it had become dark olive green except for the abdomen which was light green. The chrysalis was dissected and found to be hollow except for the dead *B. ovata* and a small amount of dried body contents along one side. This observation is in agreement with Burks (1960) who stated that many lepidopterous pupae from which adult *B. ovata* have emerged still contain half or more of the uneaten host body tissues.

B. ovata is known to be a pupal parasite of over one hundred species of Lepidoptera, encompassing 18 families (Burks 1960, 1979) though is not recorded as a parasite of *D. plexippus* in Peck (1963) or Ackery and Vane-Wright (1984). This is believed to be the first published record of *B. ovata* from the Monarch Butterfly.

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SELWYN S. ROBACK

Dr. Selwyn S. Roback, 63, a curator of entomology at the Academy of Natural Sciences and an adjunct faculty member at the University of Pennsylvania, died July 1, 1988, following a stroke.

Sam Roback was a former President of The American Entomological Society, 1963-64, was a long time former editor of the Society's TRANSACTIONS, and, right up until his passing, was editor of the Society's MEMOIRS series. He also served the Society for many years as Chairman of its Library Committee.

Dr. Roback was known internationally for his studies in the Chironomidae. He curated the Academy's collections of aquatic insects, including over 133,000 specimens of chironomids, most of which he had personally collected. Sam was the author of nearly 100 scientific papers and the recipient of numerous grants from the National Science Foundation and the Environmental Protection Agency. He was a pioneer in river survey work needed for water quality studies.

Sam received his undergraduate degree from Cornell University and his Masters and Doctoral degrees from the University of Illinois. He was an elected member of the Royal Entomological Society of London and was honored as Thiensmann Memorial Lecturer at the Ninth Chironomid Congress in Bergen, Norway.

Dr. Roback is survived by his wife, the former Helen Handy; a son, Craig; a daughter, Barbara; and his mother, Bessie Tamer Roback.